UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,495	01/18/2002	David Carroll Challener	. RPS920010160US1	1606

			EXAMINER
25299	7590	06/30/2005	WILLIAMS, JEFFERY L

IBM CORPORATION
PO BOX 12195
DEPT YXSA, BLDG 002
RESEARCH TRIANGLE PARK, NC 27709

ART UNIT	PAPER NUMBER
2137	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/051,495	CHALLENER ET AL.
	Examiner	Art Unit	
	Jeffery Williams	2137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>18 January 2002</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-15</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-15</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>4/5/02</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
  Paper No(s)/Mail Date <u>1/18/02</u>.

4) ☐ Interview Summary (PTO-413)
  Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

1   **DETAILED ACTION**

2

3   *Drawings*

4

5   The drawings are objected to under 37 CFR 1.83(a) because element 70 of the

6 . drawings fails to depict 'child key 1.2' as described in the specification. Any structural

7   detail that is essential for a proper understanding of the disclosed invention should be

8   shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with

9   37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the

10   application. Any amended replacement drawing sheet should include all of the figures

11   appearing on the immediate prior version of the sheet, even if only one figure is being

12   amended. The figure or figure number of an amended drawing should not be labeled as

13   "amended." If a drawing figure is to be canceled, the appropriate figure must be

14   removed from the replacement sheet, and where necessary, the remaining figures must

15   be renumbered and appropriate changes made to the brief description of the several

16   views of the drawings for consistency. Additional replacement sheets may be necessary

17   to show the renumbering of the remaining figures. Each drawing sheet submitted after

18   the filing date of an application must be labeled in the top margin as either

19   "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are

20   not accepted by the examiner, the applicant will be notified and informed of any required

21   corrective action in the next Office action. The objection to the drawings will not be held

22   in abeyance.

1   ***Specification***

2   The disclosure is objected to because of the following informalities:

3   Page 13, line 5 contains the misspelling of 'least key' as 'lease key'.

4   Page 13, line 10 contains the variable 'V' in the probability equation. This

5   variable is previously referred to as 'U' in the specification, line 7..

6   Appropriate correction is required.

7

8   ***Claim Rejections - 35 USC § 103***

9   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

10   obviousness rejections set forth in this Office action:

11   (a) A patent may not be obtained though the invention is not identically disclosed or described as set
12   forth in section 102 of this title, if the differences between the subject matter sought to be patented and
13   the prior art are such that the subject matter as a whole would have been obvious at the time the
14   invention was made to a person having ordinary skill in the art to which said subject matter pertains.
15   Patentability shall not be negatived by the manner in which the invention was made.
16
17   **Claims 1 – 3, 5 – 8, 10 – 13, and 15 are rejected under 35 U.S.C. 103(a) as**

18   **being unpatentable over Trusted Computing Platform Alliance (TCPA), "Main**

19   **Specification Version 1.0" in view of Challenger et al., "Algorithm for Cache**

20   **Replacement", U.S. Patent 6,266,742 B1.**

21

22   Regarding claim 6, TCPA discloses a trusted computing platform system,

23   wherein exists a TPM ("computer module") designed to load, evict, and use

24   cryptographic keys that are cached within the TPM (TCPA, pages 3, 5, 6; page 19,

25   "TCPA_NOSPACE"; pages 38-40, 123-7, 136, 145-7). TCPA discloses that it is

26   necessary for the TPM to utilize more keys than is allowable, due to constraints in

1   storage space. Therefore, the trusted computing platform system provides a means for

2   managing the loading of keys into the TPM. The keys are stored, or cached, inside the

3   TPM in the form of a tree hierarchy of parent and children keys. Necessary keys

4   utilized by the TPM, but stored outside of the device, are placed in encrypted key blobs

5   (TCPA, page 123, pars. 1-3; page 124, lines 1-10). TCPA does not disclose the method

6   in particular used by the trusted computing platform to efficiently manage which keys

7   cached in the TPM or evicted from the TPM.

8   Challenger et al. discloses a method for managing objects stored in a cache.

9   Challenger et al. discloses a means for determining a replacement expense for each of

10   a plurality of cached objects in memory. The replacement expense is used to determine

11   the desirability of caching or evicting an object from memory (Challenger et al., Abstract;

12   fig. 4). The replacement expense is determined by a probability that each said evictable

13   object will be needed by the computer module after said evictable object is evicted

14   (Challenger et al., Abstract, lines 7), and an amount of cycle time required to re-store, if

15   evicted, each said evictable object in the computer module (Challenger et al., Abstract,

16   lines 7, 8; col. 1, lines 22-31). Challenger et al. further discloses a means for identifying

17   a least expensive evictable object based on said replacement expense, and means for

18   replacing said least expensive evictable object with a replacement object (Challenger et

19   al., fig. 4, elems. 420, 460; TCPA, page 123, par. 4).

20   It would have been obvious to one of ordinary skill in the art at the time of the

21   invention to employ the method of Challenger et al. for efficiently managing a cache of

22   stored objects with the system of TCPA for loading and evicting keys from a cache.

1   This would have been obvious because one of ordinary skill in the art would have been

2   motivated to manage the loading and evicting of objects ("keys") from the TPM in a

3   manner characterized by the efficient utilization of system processes.

4

5   Regarding claim 7, the combination of TCPA and Challenger et al. discloses:

6   *means for locating a blob comprising said least expensive evictable cryptology*

7   *key and a security software shell; means for removing said security software shell from*

8   *said blob; and means for storing said least expensive evictable cryptology key in said*

9   *computer module* (Challenger et al., page 124).

10

11   Regarding claim 8, the combination of TCPA and Challenger et al. discloses the

12   cycle time is determined by calculating the time to fetch the object from a remote

13   location (Challenger et al., col. 1, lines 28-32). Challenger et al. also discloses that it

14   would be obvious to one of ordinary skill in the art to apply the calculation of cycle time

15   to the caching of data stored in hierarchies (e.g. databases), thus – the calculation of

16   time necessary for the organization of data objects into hierarchal data structures

17   (Challenger et al., col. 3, lines 52-67). Therefore, the combination of TCPA and

18   Challenger et al. discloses as obvious that fact that calculating the time necessary to

19   fetch an object would include the time it takes to fetch the ancestors of which the object

20   depends upon in the hierarchal data structure. Thus, the combination of TCPA and

21   Challenger et al. disclose that the calculation of cycle time depends upon the

22   generations of ancestors.

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2   Regarding claim 10, the combination of TCPA and Challenger et al. discloses:

3   *wherein the computer module is a Trusted Platform Module (TPM)* (TCPA, page.

4   123).

5

6   Regarding claims 1 – 3, 5, 11 – 13, and 15, they are the method and computer

7   program product claims implemented by and corresponding to the system claims 6 – 8,

8   and 10, and they are rejected for the same reasons.

9

10   **Claims 4, 9, and 14 are rejected under 35 U.S.C. 103(a) as being**

11   **unpatentable over the combination of Trusted Computing Platform Alliance**

12   **(TCPA), "Main Specification Version 1.0" and Challenger et al., "Algorithm for**

13   **Cache Replacement", U.S. Patent 6,266,742 B1 as applied to claims 1 – 3, 5 – 8, 10**

14   **– 13, and 15 above, and further in view of Deshpande et al., "Method of**

15   **Reconstructing a Managed Information Tree", U.S. Patent 5,893,103.**

16

17   Regarding claim 9, the combination of TCPA and Challenger et al. disclose a

18   system for the loading (caching) of keys organized into hierarchal data structures into a

19   TPM (see rejections of claims 6, 7, and 8). The combination of TCPA and Challenger et

20   al. does not disclose in particular the method for the loading of a hierarchal structure of

21   keys.

1   Deshpande et al., discloses a method for replicating into memory a hierarchal

2   structure of objects from a remote location. Deshpande et al. discloses a means for

3   methodically loading and storing the ancestor objects of a child object until the

4   hierarchal structure is established so that the child object itself may be loaded and

5   stored (Deshpande et al., col. 4, lines 18-44).

6   It would have been obvious to one of ordinary skill in the art to employ the

7   method of Deshpande et al. for replicating in memory a hierarchal structure of data in

8   the system of the combination of TCPA and Challenger et al. for the loading and

9   caching of parent and children keys. This would have been obvious because one of

10 ordinary skill in the art would have been motivated to employ a method enabling the

11 loading of ancestor keys into memory so that a necessary child key may be loaded.

12

13   Regarding claims 4 and 14, they are the method and computer program product

14 claims implemented by and corresponding to the system claims 9, and they are rejected

15 for the same reason.

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1   ***Conclusion***

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3   The prior art made of record and not relied upon is considered pertinent to

4   applicant's disclosure:

5

6   P. Cao and S. Irani, "Cost-aware WWW proxy caching algorithms," in Proc.

7   USENIX Symp. on Internet Technologies and Systems, pp. 193--206, December 1997.

8   Cherkasova et al., "Method for Cache Replacement of Web Documents", U.S.

9   Patent 6,546,473 B2.

10   Cherkasova et al., "Cashing Protocol Method and System Based on Request

11   Frequency and Relative Storage Duration", U.S. Patent 6,425,057 B1.

12

13   A shortened statutory period for reply is set to expire **3** months (not less than 90

14   days) from the mailing date of this communication.

15   Any inquiry concerning this communication or earlier communications from the

16   examiner should be directed to Jeffery Williams whose telephone number is (571) 272-

17   7965. The examiner can normally be reached on 8:30-5:00.

18   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

19   supervisor, Emmanuel Moise can be reached on (571) 272-3865. The fax phone

20   number for the organization where this application or proceeding is assigned is (703)

21   872-9306.

1   Information regarding the status of an application may be obtained from the

2   Patent Application Information Retrieval (PAIR) system. Status information for

3   published applications may be obtained from either Private PAIR or Public PAIR.

4   Status information for unpublished applications is available through Private PAIR only.

5   For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

6   you have questions on access to the Private PAIR system, contact the Electronic

7   Business Center (EBC) at 866-217-9197 (toll-free).

8

9
10   Jeffery Williams   AYAZ SHEIKH
11   Assistant Examiner   SUPERVISORY PATENT EXAMINER
12   Art Unit 2137   TECHNOLOGY CENTER 2100
13   06.23.2005